AUTHOR INDEX

Friendship, R.M., see Luescher, U.A. et al. Green, G.C., see Lynch, J.J. et al.
Hansen, C., see Hemsworth, P.H. et al.
Hemsworth, P.H., Barnett, J.L., Tilbrook, A.J. and Hansen, C. (Werribee, Vic., Australia) The effects of handling by humans at calving and during milking on the behaviour and milk cortisol concentrations of primiparous dairy cows
Henderson, R. and Stolba, A. (Zurich, Switzerland) Incidence of oestrus and oestrous trends in lactating sows housed in different social and
physical environments
The sucking behaviour of triplet, twin and single lambs at pasture
Hulet, C.V., Anderson, D.M., Smith, J.N., Shupe, W.L., Taylor, Jr., C.A. and Murray, L.W. (Las Cruces, NM, U.S.A.)
Bonding of goats to sheep and cattle for protection from predators
Istasse, L., see Dechamps, P. et al.
Jackson, S.G., see Duren, S.E. et al. Jensen, P. (Skara, Sweden)
Nest site choice and nest building of free-ranging domestic pigs due to farrow
Jones, R.B. (Roslin, Midlothian, Gt. Britain)
Experimenter visibility, spectacles and tonic immobility in the domestic fowl
Kalra, D.B., see Srivastava, R.S. et al.
Kam, M., see Degen, A.A. et al.
Langford, M.J. (St. John's, Newfoundland, Canada)
Animal welfare and human welfare
Lariviere, N., see DeRoth, L. et al.
Le Neindre, P., see Veissier, I. et al.
Lissemore, K.D., see Luescher, U.A. et al.
Luescher, U.A., Friendship, R.M., Lissemore, K.D. and McKeown, D.B. (Guelph, Ont., Canada) Clinical ethology in food animal practice
Lynch, J.J., Hinch, G.N., Elwin, R.L., Green, G.C. and Davies, H.I. (Armidale, N.S.W., Australia) and Bouissou, M.F. (Nouzilly, France)
Social organization in young Merino and Merino × Border Leicester ewes
Lyons, D.M. (Davis, CA, U.S.A.)
Individual differences in temperament of dairy goats and the inhibition of milk ejection . 269
Mathur, A.K., see Srivastava, R.S. et al.
McCall, C.A. (Storrs, CT, U.S.A.)
The effect of body condition of horses on discrimination learning abilities
McKeown, D.B., see Luescher, U.A. et al.
Murata, Y., see Tanida, H. et al.
Murray, L.W., see Hulet, C.V. et al.
Nicks, B., see Dechamps, P. et al.
Nicol, C.J. (Bristol, Gt. Britain)
Social influences on the comfort behaviour of laying hens
Australia)
Boar-induced puberty in gilts handled pleasantly or unpleasantly during rearing 225

Pearce, G.P., see Paterson, A.M. and Pearce, G.P.	
Rosenstrauch, A., see Degen, A.A. et al.	
Rushen, J., see De Passillé, A.M.B. and Rushen, J.	
Shupe, W.L., see Hulet, C.V. et al.	
Shutt, D.A., see Fell, L.R. and Shutt, D.A.	
Smith, J.N., see Hulet, C.V. et al.	
Srivastava, R.S., Mathur, A.K. and Kalra, D.B. (Rajasthan, India)	
Effect of training ram hoggets on their adult sexual behaviour	295
Stolba, A., see Henderson, R. and Stolba, A.	
Tanaka, T., see Tanida, H. et al.	
Tanida, H., Murata, Y., Tanaka, T. and Yoshimoto, T. (Kanagawa-ken, Japan)	
Mounting efficiencies, courtship behavior and mate preference of boars under m	ulti-sire
mating	245
Taylor, Jr., C.A., see Hulet, C.V. et al.	
Tennessen, T. (Truro, Nova Scotia, Canada)	
Coping with confinement — features of the environment that influence animals	ability
to adapt	
Tilbrook, A.J., see Hemsworth, P.H. et al.	
Trallat, G., see Veissier, I. et al.	
Van der Haar, J.W., see Blokhuis, H.J. and van der Haar, J.W.	
Van Putten, G. (Zeist, The Netherlands)	
The pig: a model for discussing animal behaviour and welfare	11
Veissier, I., Le Neindre, P. and Trillat, G. (Ceyrat, France)	
The use of circadian behaviour to measure adaptation of calves to changes in the	eir
environment	**********
Vermette, L., see DeRoth, L. et al.	
Yoshimoto, T., see Tanida, H. et al.	



SUBJECT INDEX

Adaptation Coping with confinement — features of the environment that influence animals' ability	
to adapt	2
Behavioural needs	,
Recognizing behavioral needs	1
Behavioural responses	2.
Behavioural and hormonal responses to acute surgical stress in sheep	9
Blood catecholamines	0
Blood catecholamines in response to handling in normal and stress-susceptible swine 25	2
Bulls	9
Influence of supplemental lighting on the resting behaviour of fattening bulls kept in a stanchion barn	3
Cattle	9
Bonding of goats to sheep and cattle for protection from predators	1
The use of circadian behaviour to measure adaptation of calves to changes in their	•
environment	1
Chickens	^
Social influences on the comfort behaviour of laying hens	5
The effect of a sudden change in floor type on pecking behaviour in chicks	
Circadian behaviour	_
The use of circadian behaviour to measure adaptation of calves to changes in their	
environment	1
Clinical ethology	
Clinical ethology in food animal practice	1
Comfort behaviour	
Social influences on the comfort behaviour of laying hens	5
Concentrate feed	
Time-activity budget of ostriches (Struthio camelus) offered concentrate feed and	
maintained in outdoor pens	7
Confinement	
Coping with confinement - features of the environment that influence animals' ability	
to adapt	9
Courtship behaviour	
Mounting efficiencies, courtship behavior and mate preference of boars under multi-sire	
mating24	5
Cows	
The effects of handling by humans at calving and during milking on the behaviour and milk cortisol concentrations of primiparous dairy cows	13
Defensive behaviour	
Case reports on defensive behaviour in equine and bovine subjects in response to	
vocalization of the common vampire bat (Desmodus rotundus)	17
Dominance	
Social influences on the comfort behaviour of laying hens	15
Dominance rankings	
Social organization in young Merino and Merino × Border Leicester ewes	19
Ecology	
The ecological basis of behaviour	15

Ethosystem	
Animal welfare theory: the keyboard of the maintenance ethosystem	7
Feather pecking	
Effects of floor type during rearing and of beak trimming on ground pecking and feather	
pecking in laying hens35	9
Feed-back regulation	
Nest site choice and nest building of free-ranging domestic pigs due to farrow	13
Floor type	
The effect of a sudden change in floor type on pecking behaviour in chicks	35
Genetic engineering	
Genetic engineering and animal welfare	05
Gilts	
Boar-induced puberty in gilts handled pleasantly or unpleasantly during rearing 23	25
Goats	
Bonding of goats to sheep and cattle for protection from predators	31
Individual differences in temperament of dairy goats and the inhibition of milk ejection . 20	39
Ground pecking	
Effects of floor type during rearing and of beak trimming on ground pecking and feather	
pecking in laying hens	59
Hormonal responses	-
Behavioural and hormonal responses to acute surgical stress in sheep	83
Horses	00
The effect of body condition of horses on discrimination learning abilities	27
Housing	
The use of circadian behaviour to measure adaptation of calves to changes in their	
environment	1
Humans	-
The effects of handling by humans at calving and during milking on the behaviour and	
milk cortisol concentrations of primiparous dairy cows	13
Ingestive behaviour	
Modification of ingestive behavior due to exercise in yearling horses grazing	
orchardgrass	35
Learning abilities	00
The effect of body condition of horses on discrimination learning abilities	27
Milk ejection	
Individual differences in temperament of dairy goats and the inhibition of milk ejection . 2	69
Milk yield	UU
The sucking behaviour of triplet, twin and single lambs at pasture	30
Motivation	00
Motivation in relation to the welfare of enclosed livestock	20
Multi-sire mating	20
Mounting efficiencies, courtship behavior and mate preference of boars under multi-sire	
mating	45
Nest building	10
Nest site choice and nest building of free-ranging domestic pigs due to farrow	19
Oestrous trends	10
Incidence of oestrus and oestrous trends in lactating sows housed in different social and	
physical environments	125
Ostriches 2	OU
Time-activity budget of ostriches (Struthio camelus) offered concentrate feed and	
maintained in outdoor pens	147
mameamea in cardon pens	FE 8

Pecking behaviour	
The effect of a sudden change in floor type on pecking behaviour in chicks	5
Physical environments	
Incidence of oestrus and oestrous trends in lactating sows housed in different social and physical environments	5
Piglet mortality	
Nest site choice and nest building of free-ranging domestic pigs due to farrow	3
Pigs	
Nest site choice and nest building of free-ranging domestic pigs due to farrow	3
Suckling and teat disputes by neonatal piglets	
The pig: a model for discussing animal behaviour and welfare	5
Predators	
Bonding of goats to sheep and cattle for protection from predators	1
Puberty	
Boar-induced puberty in gilts handled pleasantly or unpleasantly during rearing 22	5
Ram hoggets	
Effect of training ram hoggets on their adult sexual behaviour	5
Resting behaviour	
Influence of supplemental lighting on the resting behaviour of fattening bulls kept in a	
stanchion barn30	3
Sexual behaviour	
Effect of training ram hoggets on their adult sexual behaviour	5
Sexual selection	
Sexual selection (book review)	1
Sheep	
Behavioural and hormonal responses to acute surgical stress in sheep	13
Bonding of goats to sheep and cattle for protection from predators	1
Social organization in young Merino and Merino × Border Leicester ewes	19
The sucking behaviour of triplet, twin and single lambs at pasture	
Social behaviour	
Social organization in young Merino and Merino × Border Leicester ewes	19
Social environments	
Incidence of oestrus and oestrous trends in lactating sows housed in different social and	
physical environments	35
Social organization	
Social influences on the comfort behaviour of laying hens	15
Social organization in young Merino and Merino × Border Leicester ewes	19
Stress	
Behavioural and hormonal responses to acute surgical stress in sheep	33
Blood catecholamines in response to handling in normal and stress-susceptible swine 25	55
Suckling behaviour	
Suckling and teat disputes by neonatal piglets	23
The sucking behaviour of triplet, twin and single lambs at pasture	39
Teat disputes	
Suckling and teat disputes by neonatal piglets	23
Vampire bat	
Case reports on defensive behaviour in equine and bovine subjects in response to	
vocalization of the common vampire bat (Desmodus rotundus)	77
Vocalization	
Case reports on defensive behaviour in equine and bovine subjects in response to	
vocalization of the common vampire bat (Desmodus rotundus)	77

Welfare

Animal welfare and human welfare	95
Animal welfare practice: primary factors and objectives	159
Animal welfare theory: the keyboard of the maintenance ethosystem	177
Coping with confinement — features of the environment that influence animals' ability	
to adapt	139
The welfare-behaviour relationship	93
Genetic engineering and animal welfare	105
Motivation in relation to the welfare of enclosed livestock	129
Recognizing behavioral needs	151
The pig: a model for discussing animal behaviour and welfare	115



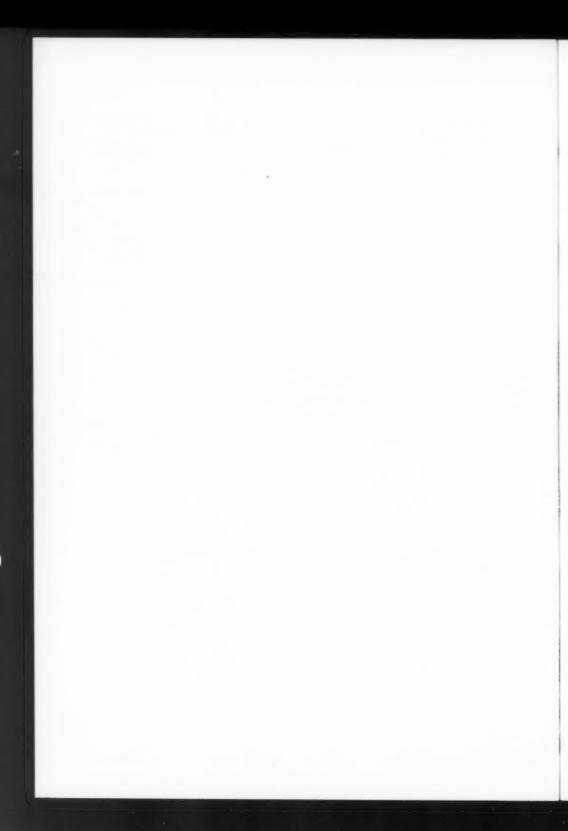


Contents of Applied Animal Behaviour Science, Volume 22

VOL. 22 NO. 1	JANUARY 1989
The use of circadian behaviour to measure adaptation of environment	calves to changes in their
I. Veissier, P. le Neindre and G. Trillat (Ceyrat, Fran	
Nest site choice and nest building of free-ranging domes	tic pigs due to farrow
P. Jensen (Skara, Sweden)	
Suckling and teat disputes by neonatal piglets A.M.B. de Passillé (Lennoxville, Que., Canada) and	
Canada)	
The sucking behaviour of triplet, twin and single lambs	at pasture
G.N. Hinch (Mosgiel, New Zealand)	
Social organization in young Merino and Merino × Bor	
J.J. Lynch, G.N. Hinch, R.L. Elwin, G.C. Green, H.I	. Davies (Armidale, N.S.W.,
Australia) and M.F. Bouissou (Nouzilly, France)	
The effect of a sudden change in floor type on pecking be	ehaviour in chicks
H.J. Blokhuis (Beekbergen, The Netherlands)	
Social influences on the comfort behaviour of laying hen C.J. Nicol (Bristol, Gt. Britain)	18
C.J. Nicol (Bristol, Gt. Britain)	75
Proceedings (Papers presented at the Winter Meeting Ethology, London, Gt. Britain, 2 December 1987)	of the Society for Veterinary
Ethology, London, Gt. Britain, 2 December 1987)	
VOL. 22 NO. 2	FEBRUARY 1989
Special Issue on: Behaviour and Welfare	
Editorial	
The welfare-behaviour relationship	
A.F. Fraser (St. John's, Newfoundland, Canada)	
Animal welfare and human welfare	
M.J. Langford (St. John's, Newfoundland, Canada)	98
Genetic engineering and animal welfare	
M.W. Fox (Washington, DC, U.S.A.)	
The pig: a model for discussing animal behaviour and w G. van Putten (Zeist, The Netherlands)	elfare
Motivation in relation to the welfare of enclosed livesto	
G.R. Dellmeier (College Station, TX, U.S.A.)	
Coping with confinement — features of the environment	
adapt	tilat initience animais ability to
T. Tennessen (Truro, Nova Scotia, Canada)	139
Recognizing behavioral needs	
T. Friend (College Station, TX, U.S.A.)	
Animal welfare practice: primary factors and objectives	
A.F. Fraser (St. John's, Newfoundland, Canada)	
Animal welfare theory: the keyboard of the maintenance	e ethosystem
A.F. Fraser (St. John's, Newfoundland, Canada)	

U.A. Luescher, R.M. Friendship, K.D. Lissemore and D.B. McKeown (Canada)	
The ecological basis of behaviour	
D.G. Bryant (St. John's, Newfoundland, Canada)	215
VOL. 22 NOS. 3-4	APRIL 1989
Boar-induced puberty in gilts handled pleasantly or unpleasantly during rea A.M. Paterson (South Perth, W.A., Australia) and G.P. Pearce (Nedlan Australia)	ds, W.A.,
Incidence of oestrus and oestrous trends in lactating sows housed in different physical environments	nt social and
R. Henderson and A. Stolba (Zurich, Switzerland)	235
Mounting efficiencies, courtship behavior and mate preference of boars und mating	
H. Tanida, Y. Murata, T. Tanaka and T. Yoshimoto (Kanagawa-ken, Ja	
Blood catecholamines in response to handling in normal and stress-suscepti	
L. DeRoth, L. Vermette, A. Blouin and N. Lariviere (St. Hyacinthe, Que Bonding of goats to sheep and cattle for protection from predators	e., Canada) 255
C.V. Hulet, D.M. Anderson, J.N. Smith, W.L. Shupe, C.A. Taylor, Jr. ar	dI W
Murray (Las Cruces, NM, U.S.A.)	
Individual differences in temperament of dairy goats and the inhibition of r D.M. Lyons (Davis, CA, U.S.A.)	nilk ejection
Behavioural and hormonal responses to acute surgical stress in sheep	
L.R. Fell and D.A. Shutt (Richmond, N.S.W., Australia)	283
Effect of training ram hoggets on their adult sexual behaviour	
R.S. Srivastava, A.K. Mathur and D.B. Kalra (Rajasthan, India)	295
Influence of supplemental lighting on the resting behaviour of fattening bul stanchion barn	
P. Dechamps, B. Nicks, B. Canart and L. Istasse (Brussels, Belgium)	
The effects of handling by humans at calving and during milking on the bel milk cortisol concentrations of primiparous dairy cows	
P.H. Hemsworth, J.L. Barnett, A.J. Tilbrook and C. Hansen (Werribee	
Australia)	313
C.A. McCall (Storrs, CT, U.S.A.)	297
Modification of ingestive behavior due to exercise in yearling horses grazing	
S.E. Duren, C.T. Dougherty, S.G. Jackson and J.P. Baker (Lexington, 1	
Time-activity budget of ostriches (Struthio camelus) offered concentrate f maintained in outdoor pens	
A.A. Degen, M. Kam and A. Rosenstrauch (Beer Sheva, Israel)	347
Effects of floor type during rearing and of beak trimming on ground peckin pecking in laying hens	
H.J. Blokhuis and J.W. van der Haar (Beekbergen, The Netherlands)	359
Short Communications	
Experimenter visibility, spectacles and tonic immobility in the domestic fo	
R.B. Jones (Roslin, Midlothian, Gt. Britain)	
Case reports on defensive behaviour in equine and bovine subjects in respo vocalization of the common vampire bat (<i>Desmodus rotundus</i>)	
H.A. Delpietro (Misiones, Argentina)	37

Book Review	
Sexual selection	
R.G. Beilharz (Parkville, Vic., Australia)	38
Author Index	38
Subject Index	38



APPLIED ANIMAL BEHAVIOUR SCIENCE

VOL. 22 NOS. 3-4

CONTENTS

APRIL 1989

(Abstracted/Indexed in: Agric. Eng. Abstr., Anim. Behav. Abstr., Biol. Abstr., Curr. Contents A, B & ES, Index Vet., Psychol. Abstr., Vet. Bull.)

Boar-induced puberty in gilts handled pleasantly or unpleasantly during rearing A.M. Paterson (South Perth, W.A., Australia) and G.P. Pearce (Nedlands, W.A.,
Australia)
Incidence of oestrus and oestrous trends in lactating sows housed in different social and
physical environments
R. Henderson and A. Stolba (Zurich, Switzerland)
Mounting efficiencies, courtship behavior and mate preference of boars under multi-sire mating
H. Tanida, Y. Murata, T. Tanaka and T. Yoshimoto (Kanagawa-ken, Japan)
Blood catecholamines in response to handling in normal and stress-susceptible swine L. DeRoth, L. Vermette, A. Blouin and N. Lariviere (St. Hyacinthe, Que., Canada)
Bonding of goats to sheep and cattle for protection from predators
C.V. Hulet, D.M. Anderson, J.N. Smith, W.L. Shupe, C.A. Taylor, Jr. and L.W. Murray (Las Cruces, NM, U.S.A.)
Individual differences in temperament of dairy goats and the inhibition of milk ejection
D.M. Lyons (Davis, CA, U.S.A.)
Behavioural and hormonal responses to acute surgical stress in sheep
L.R. Fell and D.A. Shutt (Richmond, N.S.W., Australia)
Effect of training ram hoggets on their adult sexual behaviour
R.S. Srivastava, A.K. Mathur and D.B. Kalra (Rajasthan, India)
Influence of supplemental lighting on the resting behaviour of fattening bulls kept in a stanchion barn
P. Dechamps, B. Nicks, B. Canart and L. Istasse (Brussels, Belgium)
The effects of handling by humans at calving and during milking on the behaviour and milk cortisol concentrations of primiparous dairy cows
P.H. Hemsworth, J.L. Barnett, A.J. Tilbrook and C. Hansen (Werribee, Vic., Australia) 31
The effect of body condition of horses on discrimination learning abilities
C.A. McCall (Storrs, CT, U.S.A.)
Modification of ingestive behavior due to exercise in yearling horses grazing orchardgrass
S.E. Duren, C.T. Dougherty, S.G. Jackson and J.P. Baker (Lexington, KY, U.S.A.)
Time-activity budget of ostriches (Struthio camelus) offered concentrate feed and maintained in outdoor pens
A.A. Degen, M. Kam and A. Rosenstrauch (Beer Sheva, Israel)
Effects of floor type during rearing and of beak trimming on ground pecking and feather
pecking in laying hens
H.J. Blokhuis and J.W. van der Haar (Beekbergen, The Netherlands)
Short Communications
Experimenter visibility, spectacles and tonic immobility in the domestic fowl
R.B. Jones (Roslin, Midlothian, Gt. Britain)
Case reports on defensive behaviour in equine and bovine subjects in response to
vocalization of the common vampire bat (Desmodus rotundus)
H.A. Delpietro (Misiones, Argentina)
Book Review
Sexual selection
R.G. Beilharz (Parkville, Vic., Australia)
n.g. Delinarz (Farkville, Vic., Australia)
Author Index
Subject Index
Contents of Applied Animal Behaviour Science, Volume 22